Guide to Surveillance and Reporting

Managing Editor
Allison Hackbarth, MPH

Contributors

Martha Badger, RN
Barbara Bolstorff, MPH
Timothy Broadbent, MPA
Joe Conidi, MPH
Dan Church, MPH
Janine Cory, MPH
Melissa Cumming, MS
Jim Daniel, MPH
Alfred DeMaria, Jr., MD
Franka DesVignes, PhD
Richard Dicker, MD, MS
Stephen Fleming, EdM
Robert Goldstein, MPH
Ellen Gould, MPH
Dan Hamlin, MS
Gillian Haney, MPH
Nancy Harrington, MPH
Emily Harvey, RS
MarySheryl Horine, MS
James Ida, MS
Jocelyn Isadore, MPH
Pat Kludt, MPH
Elissa Laitin, MPH
Tracy LaPorte, MS
Donna Lazorik, RN, MS
Susan Lett, MD, MPH
Bela T. Matyas, MD, MPH
Mike McGuill, DVM, MPH
Ed Pomfred, RN
Marija Popstefanija, MD, MPH
James Ransom, MPH
Stephanie Schauer, PhD
Susan Soliva, MPH
Katherine Yih, PhD, MPH

Copy Editor
Caryl Haddock

Cover and Chapter Divider Design
Terry Stangel

Massachusetts Department of Public Health
Division of Epidemiology and Immunization

January 2001

Guide to Surveillance and Reporting

A publication of the Massachusetts Department of Public Health,
Division of Epidemiology and Immunization

January 2001

Comments, questions and suggestions regarding this reference manual are welcome.
Please direct correspondence to:

Allison Hackbarth, MPH
Division of Epidemiology and Immunization
Massachusetts Department of Public Health
305 South Street
Jamaica Plain, MA 02130

SUGGESTED CITATION

Division of Epidemiology and Immunization. *Guide to Surveillance and Reporting*. Massachusetts Department of Public Health, January 2001.

Acknowledgments

The *Guide to Surveillance and Reporting* was made possible by the Epidemiology and Laboratory Capacity for Infectious Disease Cooperative Agreement with the Centers for Disease Control and Prevention (CDC), National Center for Infectious Diseases (cooperative agreement number U5O/CCU115217-04). The contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC.

The editors wish to acknowledge the contribution of the Oregon Health Division's Acute and Communicable Disease Program, whose *Investigative Guidelines* served as a model for the organization of this *Guide*.

The editors wish to thank the following for their invaluable contributions to the development of this manual. Every attempt has been made to recognize all contributors. We regret any omissions that may have occurred.

Massachusetts Department of Public Health

Dina Caloggero, MPA
Palma Caron
Roger Eaton, PhD
Harvey George, PhD
Bob Goldbaum
Gerald Harold
Scott Hennigan
Joy Keohane
Joe Mucci
Kristin Myers, PhD
Joe Peppe
Doreen Pinkham
Ellen Silva
Barbara Werner, PhD

Local Boards of Health and Local Health Departments

Agawam
Andover
Athol
Attleboro
Avon
Barnstable
Bedford
Belmont
Boston
Brewster
Bridgewater
Brookline
Cambridge
Chatham
Chelsea
Chicopee
Dartmouth
Duxbury
Easthampton
Everett
Fall River
Framingham
Franklin
Gardner
Haverhill
Hingham
Holbrook
Holliston
Holyoke
Hopkinton
Lawrence
Lexington
Longmeadow
Marion
Marlborough
Medfield
Middleboro
Millis
Milton
Natick
Needham
New Bedford
North Attleboro
Norwood
Quincy
Randolph
Salem
Shrewsbury
Somerset
Somerville
Southampton
Springfield
Stoneham
Swampscott
Swansea
Tewksbury
Wakefield
Watertown
Wellesley
Westborough
Westfield
Westwood
West Springfield
Wrentham

Other Organizations

AC Visiting Nurse Association
Bridgewater Visiting Nurse Association
Community Visiting Nurse Association
Framingham WIC
Nashoba Nursing Services
Visiting Nurse Association Care Network

Table of Contents

Introduction

1) Purpose of *Guide to Surveillance and Reporting*

Infectious diseases are a continuing threat to all people, regardless of age, gender, lifestyle, ethnic background or socioeconomic status. They cause illness, suffering and even death, and place an enormous financial burden on society. Although some infectious diseases have been controlled by modern advances, new ones are constantly emerging. State public health officials rely on local boards of health, healthcare providers, laboratories and other public health personnel to report the occurrence of notifiable diseases. Without such data, trends cannot be accurately monitored, unusual occurrences of diseases (such as outbreaks) might not be detected or appropriately responded to, and the effectiveness of control and prevention activities cannot be easily evaluated.

The Massachusetts Department of Public Health (MDPH), Division of Epidemiology and Immunization is placing increased emphasis on strengthening infectious disease surveillance and response. This reference manual is part of the Division's focus on providing more training and technical assistance to local boards of health. The purpose of this manual is to guide local boards of health through specific surveillance and reporting responsibilities for the diseases currently reportable to the Division (see list at the end of this Introduction). Reportable infectious diseases not covered in this manual include sexually transmitted diseases, tuberculosis and HIV/AIDS. Section 3) B of this Introduction briefly summarizes these diseases. For more specific information on surveillance and reporting of these diseases, contact the appropriate division within the Bureau of Communicable Disease Control (see Figure 1 for telephone numbers).

The manual is arranged alphabetically by disease, with each disease in its own chapter. Section 4 of this Introduction (Organization of Each Disease Chapter) describes the content of each chapter. While this manual is targeted to local board of health personnel, other healthcare professionals can also use the information to facilitate their understanding of local public health surveillance and reporting responsibilities and of how they themselves can collaborate and play a role in strengthening timely and complete reporting.

2) Organization of the Bureau of Communicable Disease Control

The MDPH, Bureau of Communicable Disease Control is housed at the State Laboratory Institute in Jamaica Plain. The Division of Epidemiology and Immunization is one of five divisions that make up the Bureau. The Division is further subdivided into three programs: Epidemiology Program, Immunization Program, and Surveillance and Information Systems Program (see Figure 1 below).

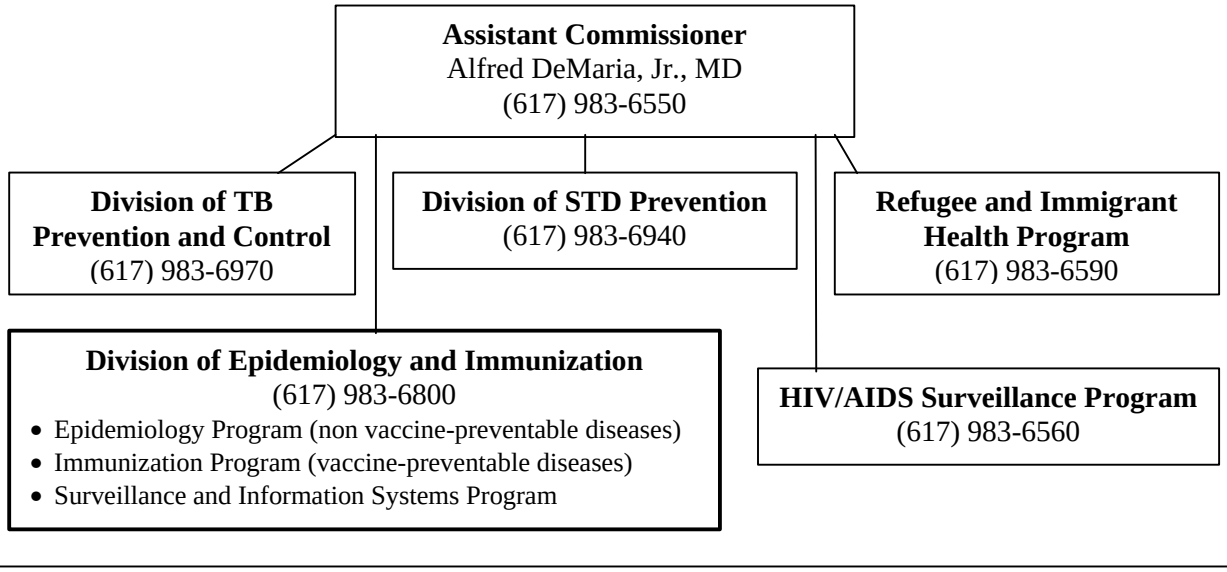
3) The Massachusetts Reportable Disease Surveillance System

A. What is Surveillance?

Simply stated, disease surveillance is the regular collection, monitoring and analysis of data relevant for control and prevention. The data may be used to define baseline levels of disease. By knowing what is baseline, one may then identify unusual occurrences of disease. The purposes of infectious disease surveillance are to interrupt transmission of disease to susceptible persons and to reduce morbidity and mortality through:

- timely reporting,
- identification and investigation of outbreaks, and
- interpretation of investigative data and dissemination of findings.

Figure 1—Organization of the Bureau of Communicable Disease Control



Surveillance is often categorized into two types: "active surveillance" and "passive surveillance." Traditional reporting of diseases by healthcare providers and laboratories is considered passive surveillance. This means that the organization receiving the information waits for initial data on a case to be submitted. This usually leads to collection of additional information and implementation of follow-up activities. An example of this would be when a local board of health receives a report of invasive *Neisseria meningitidis* infection from a healthcare provider or facility.

A sub-category of passive surveillance is "enhanced passive surveillance." In this situation, the organization receiving data works closely with healthcare providers and laboratories that are most likely to report a particular disease or group of diseases, and sets up systems to increase timeliness and completeness of reporting. An example of enhanced passive surveillance is the MDPH's current project assessing Lyme disease in certain areas of the state. Enhanced passive surveillance often requires phone calls and other follow-up activities with reporting sources and involves more work than traditional passive surveillance.

In the case of active surveillance, the organization receiving information takes *direct* action in collecting this information. This may occur through direct review of medical records, laboratory records, or screening of high-risk populations. An example of active surveillance occurred in Massachusetts in the late 1990s when an increased incidence of hepatitis A was observed in a particular population. In order to gain a more complete picture of the situation, certain healthcare facilities serving this population worked with MDPH to review all medical records with information suggesting recent infection with hepatitis A virus. A more comprehensive picture of the situation was gained. This led to an education and vaccination campaign.

B. Legal Basis

In Massachusetts, reporting of communicable diseases is required under Massachusetts General Laws, Chapter 111, Sections 3, 6, 7, 109, 110, 111 and 112, and Chapter 111D, Section 6. These laws are implemented by regulation under Chapter 105, Code of Massachusetts Regulations (CMR), Section 300 *et seq*: Reportable Diseases and Isolation and Quarantine Requirements. The purpose of these regulations is "to list those diseases declared dangerous by the Massachusetts Department of Public Health, and to establish reporting, isolation and quarantine requirements. This is intended for use by local boards of

health, hospitals, physicians, educational and recreational program health officials, food industry officials, and the public."

Infectious diseases designated as dangerous to the public health must be reported directly to the local board of health. The only exceptions to this are sexually transmitted diseases, tuberculosis, HIV/AIDS and rabies post-exposure prophylaxis, which are reported directly to the MDPH (see Figure 2—Massachusetts Reportable Disease Surveillance System). Local boards of health or their designees are authorized to accept, investigate and submit reportable disease case information to the MDPH, Bureau of Communicable Disease Control.

Reporting of Tuberculosis. "Any healthcare provider, laboratory, board of health, or administrator of a city, state, or private institution or hospital who has knowledge of a case of confirmed tuberculosis or clinically suspected tuberculosis, as defined in *105 CMR 356.004*, shall notify the Division of Tuberculosis Control in the Department within 24 hours. Upon receipt of such notice, the Division of Tuberculosis Control shall notify the local board of health within 24 hours. Cases involving residents of the city of Boston having confirmed or clinically suspected tuberculosis shall be reported to both the Department and to the Boston Department of Health and Hospitals within 24 hours. This notice shall include the case name, date of birth, age, sex, case address, provider name and provider phone number." For more information, local boards of health should contact the Division of TB Control directly at (617) 983-6970.

Reporting of HIV/AIDS. HIV and AIDS (as determined by a laboratory test diagnostic of HIV infection or AIDS) are reportable directly to the MDPH, HIV/AIDS Surveillance Program. Reporting is to be done by healthcare providers, laboratories and other officials designated by the MDPH using a form developed and approved by the MDPH. Local boards of health should contact the HIV/AIDS Surveillance Program directly at (617) 983-6560 if there are any questions regarding reporting of HIV/AIDS.

Reporting of STDs.
Cases of sexually transmitted diseases (STD), as determined by a clinical diagnosis and/or from laboratory evidence of an infection, are reportable directly to the Division of STD Prevention of the MDPH. Reporting is accomplished by clinicians, laboratories and other officials designated by the MDPH using a form or format approved by the MDPH. Local boards of health, clinicians and laboratories can contact the Division of STD Prevention directly at (617) 983-6940, 6942, or 6945 for questions or technical assistance regarding reporting, or for any informational materials or if a speaker about STD is desired. For help with interpreting syphilis serology results, clinicians can call the Division's Sero-Reactor Desk at (617) 983-6954.

Summary information on nationally notifiable diseases is submitted to the Centers for Disease Control and Prevention (CDC) on a weekly basis (without personal identifiers). This information is used to track national and regional disease trends. Two lists of diseases currently reportable to the Bureau of Communicable Disease Control (by healthcare providers and by laboratories) are provided at the end of this Introduction. These lists are updated every year or two, so if you have an older version you should call the Division of Epidemiology and Immunization at (617) 983-6800 for copies of the most current list.

C. Reporting and Case Investigation: State versus Local Role

The Division of Epidemiology and Immunization collaborates with local boards of health in the investigation of communicable disease cases and the implementation of appropriate control and prevention measures. The guidelines in this manual, as well as other referenced material, form the basis for local board of health communicable disease reporting, investigation and control. Due to the generally low prevalence of most vaccine-preventable diseases and national elimination goals established for some of them, rapid, intensive and uniform follow-up is required for every case. For this reason, MDPH epidemiologists generally take a primary role in vaccine-preventable disease case investigation and outbreak control,

including filling out the official case report form. For other infectious diseases, the local health department takes primary role in investigating individual cases. Note that the MDPH has "coordinate powers" with local boards of health and may initiate an investigation. When a local board of health is unavailable or can't be reached, the MDPH may receive reports directly from healthcare providers.

When clusters of illness, potential bioterrorist agents, emerging infections or other serious threats to public health are identified, the MDPH will often provide technical assistance to local boards of health. This assistance will range from serving in a consulting capacity to direct management of the investigation, implementation of control and prevention measures, and follow-up activities. In some situations, the MDPH may request federal technical assistance from the CDC. (*Note*: Requests for federal technical assistance must be made by the MDPH.)

When an institution such as a healthcare facility or a school is the site of possible transmission, the infection control staff of the healthcare facility or the school nurse is typically actively involved in the investigation and the application of control and prevention measures. Decisions about varying the control measures are normally made collectively by the MDPH, the local board of health, and the infection control staff (or equivalent) in the affected institution. However, the MDPH and the local board of health working together have ultimate authority.

D. Timeliness of Reporting

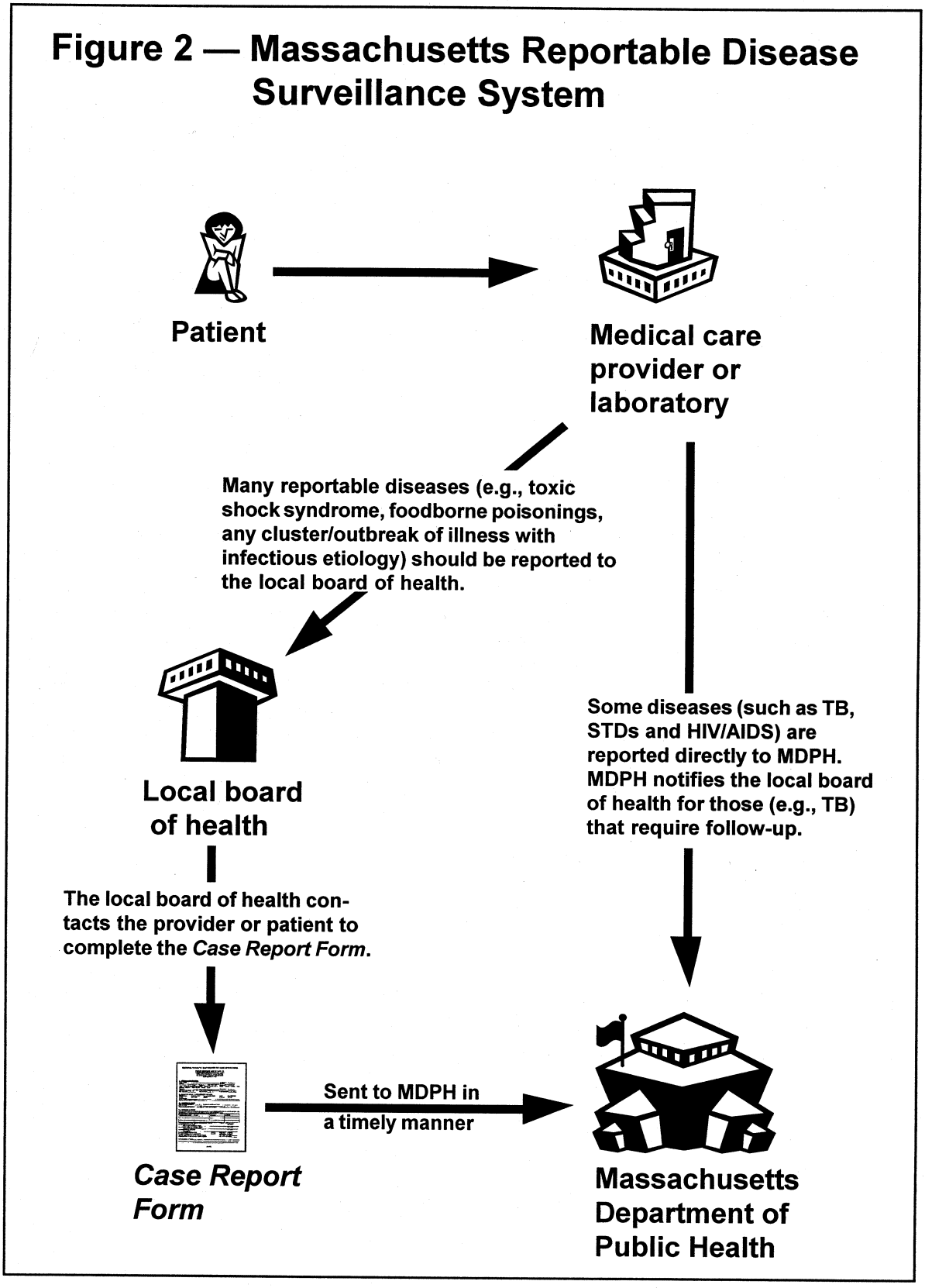
All cases of diseases reportable to the Division of Epidemiology and Immunization are reported to the MDPH by the local board of health using an official case report form. Certain diseases should be **immediately reported by phone** to the MDPH when a suspect or confirmed case is identified. Diseases that require immediate reporting should always be prioritized above other case investigations. In addition, any disease where a cluster exists or where there is a suspected foodborne outbreak should also be reported immediately and prioritized accordingly. Later, the local board of health can follow up with an official case report form(s). All diseases that are not categorized as "immediate" should be reported and investigated in a timely manner and a completed case report form with appropriate laboratory test result documentation (if applicable for the disease) should be submitted.

Note: Local boards of health are responsible for residents of their city/town, but reports are usually made to the city/town where the diagnosis is made. Reports of illness received for residents of other cities/towns should be forwarded either to the local board of health of that city/town or to the Division of Epidemiology and Immunization, Surveillance and Information Systems Program (which will notify the appropriate local board of health).

The importance of timely reporting cannot be overemphasized. For example, if a local health authority saves up all its reports of salmonella and only submits them once a year, a potential outbreak occurring across city/town limits may go unnoticed and uncontrolled.

The Division of Epidemiology and Immunization has an epidemiologist on-call during normal business hours (617-983-6800) to answer questions about case investigation and control measures. The Division's Surveillance and Information Systems Program is available during normal business hours at (617) 983-6801 for questions about reporting requirements. An epidemiologist is also available via beeper during non-work hours and weekends for **emergency situations** (*e.g.,* if you receive several complaints and are concerned about a potential foodborne illness outbreak). All calls are returned promptly.

Figure 2 — Massachusetts Reportable Disease Surveillance System



Some examples of top priorities include:

- Clusters of illness
- Diseases that require prompt administration of agents to prevent further spread and/or to reduce morbidity and mortality (*e.g.*, rabies, hepatitis A, pertussis or meningococcal infection)
- Diseases with high mortality rates (*e.g.*, eastern equine encephalitis)
- Suspect bioterrorist agents (*e.g.*, anthrax or smallpox)
- Disease that is unusual in the infected individual's demographic group or within a geographic region (*e.g.*, West Nile Virus)
- Enteric illness in a foodhandler or a household contact of a foodhandler
- Disease with a high potential for spread to others (*e.g.*, measles)

Note: To help local boards of health distinguish those diseases that pose a more serious pubic health threat, certain chapters have been flagged. These disease chapters have a box with the notation "Report Immediately" at the top of the first page. If you are unsure about which investigations to do first, or need technical assistance, contact the epidemiologist on-call at (617) 983-6800.

F. Confidentiality

Confidentiality is a legal requirement. The information that public health officials collect is often of a personal nature. Success and cooperation lies in protecting an individual's right to privacy. It is important to realize that it is not just the investigator who needs to be concerned about confidentiality. Clerical staff, administrative staff, interns and local board of health members who may be aware of personal information on a case should all be familiar with and mindful of the basic tenets of maintaining confidentiality. Only individuals who have a "need to know" should have access to sensitive records. During and after an investigation, only those individuals directly involved in interviewing a case or contacts and/or those directly involved in follow-up activities to control the spread of the disease, fall into the category of "need to know." This category would normally not include general administrators, town officials, elected officials and others involved in town government who are not directly providing disease control services. Individuals assisting in general education to the public also have no need to know personally identifying information about a case.

If you are unsure about whether it is appropriate to release information, ***do not release it!*** Check with a supervisor, the municipal attorney or legal advisor, or contact the Division of Epidemiology and Immunization at (617) 983-6800 for advice. Make sure information is released only to people who are authorized to receive it. Do not be pressured into a hasty decision. Do not even confirm an individual case unless you are certain it is appropriate to release that information. If you are unsure about who is requesting information, obtain confirmation of the requestor's identity before releasing information (*i.e.*, a signed consent form with documented identification such as a driver's license; for guardians, documentation of guardianship). Inappropriate release of data could pose a liability threat to your agency and/or municipality and possibly endanger affected individuals.

***Note*: We strongly encourage you to develop a written confidentiality policy and standard confidentiality agreement form for all local board of health staff involved in communicable disease investigation and control, or with access to case records.** The MDPH policy and agreement form may serve as a template. To obtain a copy of the MDPH *Bureau of Communicable Disease Control Confidentiality Policy*, call the Bureau's administrative office at (617) 983-6550.

It is, of course, important to realize that information must often be shared between municipalities, with healthcare providers, and with the MDPH department during the course of public health investigations and control activities. However, even in these instances "need to know" applies. Information on individual cases

may be obtained from the MDPH Bureau of Communicable Disease Control only by the responsible representative of a local health authority involved in an investigation of the case, the person who is the case, or the individual's guardian or designee (with written informed consent).

The MDPH strongly encourages municipalities to acquire a fax machine for the use of individuals involved in communicable disease reporting, investigation and control. This machine should be located in a secured area where disease control staff work, and should not be accessible to the general public. Communicable disease control personnel's use of a fax machine shared by many personnel in town government presents a heightened risk for breach of confidentiality.

Important Points Regarding Confidentiality:

- Everyone with access to case information is required to maintain confidentiality.
- Confidential information can be released only to those who "need to know."
- Be certain of the identity of the person to whom you release confidential information. Insist on confirmation of identity (*e.g.,* copy of driver's license) if unsure.
- Maintain confidentiality during reporting. When mailing case report forms to the MDPH, stamp envelopes "CONFIDENTIAL." If reporting by fax, be certain that the receiving number is a confidential fax (*e.g.,* (617) 983-6813 is the number of the Division of Epidemiology and Immunization, Surveillance Program confidential fax). When receiving information by fax to your office, confidentiality also must be maintained.
- Personally identifying information from case report forms and other forms **cannot be released** without the individual's signed consent, except to those directly involved in case investigation, control and prevention who have a "need to know."

Remember, what type of information is personally identifying and what is not can change with the situation. For example, demographic information such as age, race, sex, or zip code could be used to identify individuals if there is only a small number of cases in that time or place or during a particular investigation.

Local and state public health authorities have investigated cases of infectious disease and collected sensitive information for more than 100 years. These efforts would not be as successful if all personnel did not uphold the public's trust by maintaining strict confidentiality.

G. Reporting by Clinicians

Throughout the country, reporting of diseases by clinicians is spotty. Clinicians are more likely to report disease with high mortality or those diseases spotlighted in local and national media. Some strategies to increase reporting by clinicians include: focused education on the importance of reporting and appropriate mechanisms for reporting, identification of professional or support staff who work with clinicians and who are able to take on the responsibility for reporting of clinician-diagnosed reportable disease, and prioritization of reportable diseases that pose a more serious risk to public health.

Note: Local boards of health having difficulty obtaining information from clinicians should contact the Division of Epidemiology and Immunization at (617) 983-6800 for assistance. Also, sample letters outlining the roles and responsibilities of the local board of health for use with healthcare providers and patients are available in Appendix A.

Healthcare providers do not always inform patients that a disease is reportable to local or state health departments. This may lead to distress in a patient when they are contacted for a case investigation. Again, healthcare provider education on this issue is a good strategy for local boards of health. In addition, local

health departments should know when test results and diagnoses are communicated to a patient. For diseases that do not require immediate treatment and for which the risk of transmission to others is minimal or nonexistent, a clinician may wait for a patient's next visit before discussing the diagnosis. Local boards of health should communicate with healthcare providers in their area about these potential situations to avoid contacting patients for case investigations before the patients are even aware of their diagnoses. It is usually best to begin an investigation by contacting the reporting clinician.

The most important strategy to improve reporting by healthcare providers is to develop better working relationships with those in your jurisdiction through education, provision of reports on public health activities and disease data, and by asking for their participation in timely public health initiatives such as immunization efforts, influenza pandemic planning, bioterrorist response and/or surveillance for emerging infections.

H. Laboratory Reporting

Laboratory reports are often sent directly to the MDPH from laboratories. (Massachusetts General Law [Chapter 111D, Section 6] authorizes the MDPH to collect information on evidence of infectious diseases ascertained by clinical laboratories.) This has led to more timely reporting of disease. The MDPH sends these laboratory results to local health departments within 24 hours of receipt for follow-up. Some laboratories batch their test results and submit them periodically, potentially leading to long delays in receipt and identification or confirmation of cases. The MDPH is working to eliminate this situation through laboratory education and through the implementation of electronic laboratory data transmission. However, current laboratory systems often are not equipped to collect much of the information needed, nor are they linked directly to clinical/patient information systems. As hospital and laboratory databases become more integrated, better demographic information will become available. The MDPH currently attempts to gather additional information when patient information is too limited to allow local board of health follow-up.

I. Sentinel Surveillance and Reporting of Selected Diseases

In addition to passive, enhanced passive and active surveillance, the MDPH has several "sentinel" surveillance projects. The primary purpose of sentinel surveillance is the initial and/or representative detection of disease, whether it is emergent or recurrent. It requires that the organization receiving data work closely with a select number of sites (*e.g.,* healthcare providers, laboratories or school nurses) to supplement standard reporting. Sentinel surveillance reporting is particularly useful in providing warning of the arrival of a disease. For diseases that are high in volume and not individually reportable, such as influenza, it can also provide estimates about the burden of disease among the general population. Sentinel surveillance and reporting may also be helpful when monitoring a disease that is newly introduced to a population, such as West Nile Virus, or when providing information about a disease disproportionately affecting specific populations, such as varicella surveillance in schools.

J. Limitations of Data

- **Under-Reporting and Incomplete Data**
  Because most surveillance systems are based on diseases reported by healthcare providers, under-reporting is inevitable. It is estimated that, depending on the disease, only 5% to 80% of cases that actually occur will be reported. For example, foodborne illness is often underreported because individuals with disease do not consult a healthcare provider, or a diagnosis of "gastrointestinal illness" is made and treated without any diagnostic tests that might identify the particular pathogen. Yet, even with incomplete information, it is often possible to detect key trends and/or sources of infection. For diseases that occur less frequently, the need for completeness becomes more important. Each individual case must be treated as a "key" event.

- **Lack of Representativeness of Reported Cases**
  Health conditions are not reported randomly. For example, illnesses in a healthcare facility are reported more frequently than those diagnosed by outpatient care providers. A provider is more likely to report a case of hepatitis A if the patient is ill than if the patient has few or no symptoms. A case of meningitis is more likely to be reported than a case of chickenpox. Reporting bias can distort interpretation of disease data.

- **Changing Case Definitions**
  Different practitioners frequently use different case definitions for health problems. The more complex the disease syndrome, the greater the difficulty in reaching consensus on a case definition. Moreover, with newly emerging diseases, as understanding progresses, case definitions are frequently adjusted to allow greater accuracy of diagnosis. Also, as new diagnostic tests are developed, case definitions sometimes change to incorporate these tests. Case definitions establish uniform criteria for disease reporting and are not definitive for diagnosis.

K. Bioterrorism

Bioterrorism is the intentional use of disease agents to create fear, disrupt society or cause injuries and/or death. The use of biologic agents by terrorists may involve acts that are announced or otherwise immediately recognized. Alternatively, and considered to be more likely, would be the situation involving silent introduction of a biologic agent into the population that could take days to weeks before illness becomes apparent.

Because some diseases caused by bioterrorism may initially resemble common infectious diseases, the detection of a bioterrorist event could be difficult. Local health departments should immediately notify the epidemiologist on-call for the Division of Epidemiology and Immunization, at (617) 983-6800 (weekdays) or (617) 983-6200 (emergency number for nights/weekends), if any of the following are noticed:

- A cluster of illness that is unexplained after preliminary investigation
- One or more cases of disease in a community in which the disease does not normally occur
- Illness in an unusual geographic distribution (*e.g.,* patients all residing in one area possibly downwind of a point-location) or in an unusual population (*e.g.,* serious pneumonia among young adults).

The response to a bioterrorist event, or to any infectious disease emergency, must be led by local communities. Planning and communication are extremely important and will be most effective if a strong partnership among public health, first responders (*e.g.,* fire departments), emergency management, law enforcement and local hospitals has been developed in advance.

L. Conclusion

The best surveillance lies in collecting accurate and timely data, and in carefully and correctly interpreting the data. The interpretation should focus on elements that might lead to control and prevention of the condition. Investigators can use surveillance as a basis for appropriate public health actions. The results of such actions can be assessed for effectiveness.

4) Content of Each Disease Chapter

Section 1: The Disease and Its Epidemiology

This section is designed to give the reader appropriate background information to understand each disease. There are seven subsections (A–G) that include etiologic agent, clinical description, reservoirs, modes of transmission, incubation period, period of communicability or infectious period, and epidemiology. An additional subsection on bioterrorist potential is included, if applicable. Section 1 is meant to serve as a quick synopsis and not as a diagnostic or treatment reference. The two main sources of information used were the *Red Book: Report of the Committee on Infectious Diseases of the American Academy of Pediatrics*

and *Control of Communicable Diseases Manual*. If you need more detailed information than given in this section, please consult these sources (refer to the reference section at the end each chapter).

Section 2: Reporting Criteria and Laboratory Testing Services

This section contains two subsections (A and B). The first lists the Division of Epidemiology and Immunization case definition for the disease; namely, the clinical and/or laboratory information that a local board of health needs to report to the Division of Epidemiology and Immunization. Some diseases require laboratory confirmation for diagnosis, while others are based on clinical syndrome only. Note that this subsection lists the minimum criteria to report. A local board of health may have additional clinical or laboratory information that can be reported to the Division as well. The Division will use the information to categorize cases as suspect, probable or confirmed.

The second subsection lists laboratory testing services that are offered at the Massachusetts State Laboratory Institute for human clinical specimens. Other testing services (such as food testing) are listed if applicable for the investigation and control of that particular disease.

Section 3: Disease Reporting and Case Investigation

This section contains three subsections (A–C). The first subsection lists the purpose of surveillance and reporting for the disease. The second provides the legal requirements for laboratories and healthcare providers to report the disease.

The third subsection outlines local board of health legal responsibilities for reporting the disease to the Division of Epidemiology and Immunization. A disease is noted to be reported "immediately" here and on the first page of the chapter if it poses a more serious public health threat than others. The official case report form is indicated, with information on how to complete the form. For some diseases that pose a more serious pubic health threat, the Division may have primary responsibility for case investigation in collaboration with a local board of health. An official case report form may not be required in this situation. This is noted where applicable.

Section 4: Controlling Further Spread

This section outlines local board of health responsibilities for controlling and preventing further spread of the disease. Subsections include isolation and quarantine requirements, protection of contacts of cases, managing special situations, and preventive measures. Most of the chapters contain basic information on these topics. Further detailed information (*e.g.,* identifying and investigating an outbreak) may be referenced in other documents and can be obtained by consulting with the Division. For some diseases that pose a more serious public health threat, the Division may take primary responsibility for controlling further spread in collaboration with a local board of health. This is noted where applicable.

Please Note:

1) This manual is designed to give an overview of local board of health responsibility for surveillance, reporting, control and prevention of the diseases reportable to the Division of Epidemiology and Immunization. As experience has proved, case investigation can vary greatly from setting to setting, and it is impossible to address all the questions and situations that may arise. The Division of Epidemiology and Immunization is available at (617) 983-6800 to offer guidance and assistance as needed.

2) The terms "local board of health" and "local health department" are used interchangeably.

3) “You” and “your” refers to the people/audience for which this manual is intended, namely, personnel of local boards of health and local health departments.

4) All information in this manual must be considered in light of newer information available after publication. The three-ring binder format of this manual allows for additional and updated material as it becomes available.

5) Internet references are enclosed in angled brackets < >. These brackets are not part of the internet address.

Other Reference Materials—How to Obtain Them

There are numerous references to other documents throughout this manual. Most of these are available from the Division of Epidemiology and Immunization by calling (617) 983-6800. These include:

- *Regulation 105 CMR 300: Reportable Diseases and Isolation and Quarantine Requirements* (Promulgated November 1998, Printed July 1999). One copy is provided with this manual.
- *Control Guidelines for Long-Term Care Facilities*
- *Foodborne Illness Investigation and Control Reference Manual* (limited supply)
- *Public Health Fact Sheets*
- CDC's *Case Definitions for Infectious Conditions Under Public Health Surveillance*
- *Group A Strep and Varicella Control Guidelines*

Note: Many of these documents can also be accessed through the MDPH website available at <http://www.state.ma.us/dph>.

Information on how to obtain other references is listed below.

- *Health and Safety in Child Care*
  A copy can be purchased at the State House Book Store or ordered by mail. The address is: State House Book Store, State House, Room 116, Boston, MA 02133. For more information call the State House Book Store at (617) 727-2834.

- *The Comprehensive School Health Manual*
  A copy can be purchased at the State House Book Store or ordered by mail. The address is: State House Book Store, State House, Room 116, Boston, MA 02133. For more information call the State House Book Store at (617) 727-2834. Local boards of health can also contact their MDPH regional office to see if supplies are still available.

- *Regulation 105 CMR 590: Minimum Sanitation Standards For Food Service Establishments – Article X*
  Information on how to obtain *CMR 590* and the federal Food Code is available by calling the MDPH, Division of Food and Drugs at (617) 983-6712 or through the MDPH website at http://www.state.ma.us/dph/fpp/fcobta.htm.

- *Massachusetts General Laws*
  A copy can be purchased at the State House Book Store or ordered by mail. The address is: State House Book Store, State House, Room 116, Boston, MA 02133. For more information call the State House Book Store at (617) 727-2834. The laws can also be accessed through the Commonwealth of Massachusetts website available at <http://www.state.ma.us>.

Telephone Numbers and Address—Division of Epidemiology and Immunization

Telephone—Division of Epidemiology and Immunization	(617) 983-6800 or (888) 658-2850	Division of Epidemiology and Immunization Monday – Friday (normal business hours) The Division maintains a 24/7 epidemiologist on-call system. The epidemiologist on-call is available to answer questions regarding case investigation and implementation of control measures during normal business hours and **for emergencies only** during nights and weekends.
Telephone—Surveillance and Information Systems Program	(617) 983-6801	Surveillance and Information Systems Program Monday – Friday (normal business hours) Staff are available to answer questions regarding case report forms and reporting requirements.
Confidential Fax	(617) 983-6813	Available 24/7, but call the Surveillance Program at (617) 983-6801 during normal business hours to confirm receipt.
Mail (for case report forms)	MDPH, Division of Epidemiology and Immunization Surveillance Program, Room 241 305 South Street Jamaica Plain, MA 02130	Stamp all envelopes **CONFIDENTIAL.**
Emergencies	**(617) 983-6800** **(617) 983-6200**	Available normal business hours Available nights, weekends and holidays. An operator will page the epidemiologist on-call. *Note:* Do not wait for complete case information before calling to report potential emergency situations that may require immediate control measures to deter further transmission. Call immediately.

Communicable And Other Infectious Diseases Reportable In Massachusetts By Healthcare Providers

Per 105 CMR 300.000

REPORT IMMEDIATELY BY PHONE!

This includes both suspect and confirmed cases.

All cases should be reported to your local health department; if unavailable, call the Massachusetts Department of Public Health. **Telephone**: (617) 983-6800

Any cluster/outbreak of illness (e.g., foodborne)
Anthrax
Botulism
Brucellosis
Diphtheria
Encephalitis (any case)
Haemophilus influenzae (invasive infection)
Hemolytic Uremic Syndrome
Hepatitis A (acute [IgM ⊕])
Measles
Meningitis (bacterial)
Meningococcal Disease (*N. meningitidis*, invasive)
Poliomyelitis
Rabies (humans only)
Rubella (congenital and non-congenital)
Tetanus
Tularemia

In addition, the MDPH requests the voluntary reporting of Plague and Viral Hemorrhagic Fevers

REPORT PROMPTLY (WITHIN 24 HOURS)

All cases should be reported by mail, phone or confidential fax to your local health department. If unavailable, call the Massachusetts Department of Public Health. **Telephone:** (617) 983-6800 **Confidential Fax:** (617) 983-6813

Amebiasis
Babesiosis
Campylobacter Enteritis
Chickenpox (Varicella)
Cholera
Cryptosporidiosis
E. coli O157:H7
Food Poisonings (includes poisoning by ciguatera, scombrotoxin, mushroom toxin, tetrodotoxin, paralytic shellfish and amnesic shellfish)
Giardiasis
Hansen's Disease (Leprosy)
Hepatitis B (acute or chronic)
Hepatitis C (acute or chronic)
Kawasaki Syndrome
Legionellosis
Leptospirosis
Listeriosis
Lyme Disease
Malaria
Meningitis (viral)
Mumps
Pertussis (Whooping Cough)
Psittacosis
Reye Syndrome
Rheumatic Fever
Rocky Mountain Spotted Fever
Salmonellosis (including typhoid)
Shigellosis
Toxic Shock Syndrome
Toxoplasmosis
Trichinosis
Yersiniosis

In addition, the MDPH requests the voluntary reporting (within 24 hours) of:

Cyclospora
Dengue
Ehrlichiosis
Group A Streptococcus (invasive)
Hantavirus
Yellow Fever

(Continued on the other side)

(Continued from the other side)

REPORT PROMPTLY (WITHIN 24 HOURS)

Report all cases directly to the Massachusetts Department of Public Health, Bureau of Communicable Disease Control

HIV/AIDS: Call (617) 983-6560
Sexually Transmitted Diseases: Call (617) 983-6952
- Chancroid
- Chlamydial Infections (genital)
- Genital Warts
- Gonorrhea
- Granuloma Inguinale
- Herpes, Neonatal (onset within 30 days after birth)
- Lymphogranuloma Venereum
- Ophthalmia Neonatorum
  - a) Gonococcal
  - b) Other Agents
- Pelvic Inflammatory Disease
  - a) Gonococcal
  - b) Other Agents
- Syphilis

Tuberculosis: Call 1-888-MASSMTB
Rabies Post-Exposure Prophylaxis: Call (617) 983-6800

MDPH, its authorized agents, and local boards of health have the authority to collect pertinent information on all reportable diseases, including those not listed on this listing, related to epidemiological investigations (M.G.L. c. 111, s. 7).

Communicable Diseases Reportable In Massachusetts By Laboratories

IN ACCORDANCE WITH M.G.L. C. 111D, S. 6., EVIDENCE OF INFECTION* DUE TO THE FOLLOWING ORGANISMS IS REPORTABLE IN MASSACHUSETTS BY ALL LABORATORIES, INCLUDING HOSPITAL LABORATORIES, TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

*Evidence of infection includes results from culture methods, specific antigen or genomic tests, histology, other microscopy, and clinically-relevant serologic tests. Infection in Massachusetts residents ascertained out-of-state should also be reported.

REPORT IMMEDIATELY BY PHONE!
This includes suspect and confirmed cases.
Telephone: (617) 983-6800 and ask for the Epidemiologist On-Call

Bacillus anthracis
Brucella sp.
Clostridium botulinum
Clostridium tetani
Corynebacterium diphtheriae
Francisella tularensis
Haemophilus influenzae (from blood, CSF or other sterile fluid)
Hepatitis A virus (IgM ⊕ only)
Neisseria meningitidis (from blood, CSF or other sterile fluid)
Poliovirus
Rubella virus (IgM ⊕ only)
Rubeolavirus (measles) (IgM ⊕ only)
Yersinia pestis

REPORTABLE WITHIN 24 HOURS
Confidential Fax: (617) 983-6813
(Note: Arrangements for reporting via fax or electronic data transfer can be made.)

Babesia microti
Bordetella pertussis
Borrelia burgdorferi
Campylobacter sp.
Chlamydia psittaci
Cryptosporidium parvum
Cyclospora cayetanensis
Dengue virus
Ehrlichia canis, E. chaffeensis, E. equi, E. phagocytophila, E. sp.
Entamoeba histolytica
Escherichia coli O157:H7 (or other *E. coli*, if found in CSF)
Giardia lamblia
Group A streptococcus (from blood, CSF or other sterile fluid)
Hepatitis B virus (HBsAg ⊕, IgM Anti-HBc ⊕)
Hepatitis C virus (EIA ⊕, RIBA ⊕ or PCR ⊕)
Legionella sp.
Leptospira sp.
Listeria sp. (from blood, CSF or other sterile fluid)
Mumps virus (IgM ⊕ only)
Mycobacterium leprae
Plasmodium vivax, P. malariae, P. falciparum, P. ovale
Rickettsia rickettsii
Salmonella sp.
Shigella sp.
Toxoplasma gondii, Toxoplasma sp.
Trichinella spiralis
Varicella (DFA ⊕, viral culture or PCR ⊕)
Vibrio sp.
Yellow Fever Virus
Yersinia sp.

(Continued on the other side)

(Continued from the other side)

REPORT PROMPTLY (WITHIN 24 HOURS)

Report all cases directly to the Massachusetts Department of Public Health, Bureau of Communicable Disease Control

HIV or AIDS: Call (617) 983-6560
(Includes CD4 counts below 200/ml)
Sexually Transmitted Diseases: Call (617) 983-6952
Chlamydia trachomatis (ophthalmic, genital and neonatal infections, lymphogranuloma venereum)
Granuloma Inguinale
Haemophilus ducreyi (Chancroid)
Herpes simplex virus, Neonatal Infection (onset within 30 days after birth)
Human papilloma virus (Genital Warts)
Neisseria gonorrhoeae
Treponema pallidum (Syphilis)
Mycobacterium tuberculosis Complex: Call 1-888-MASSMTB

MDPH and its authorized agents have the authority to collect pertinent information related to epidemiological investigations (M.G.L. c. 111D, s. 6).

Local Board of Health Reporting Timeline

Note: If these diseases are initially reported to MDPH, local boards of health will be notified in a like timeframe.

REPORT AND INITIATE INVESTIGATION IMMEDIATELY!

This includes both suspect and confirmed cases.

Telephone: (617) 983-6800 Confidential Fax: (617) 983-6813

Any cluster/outbreak of illness (e.g., foodborne)
Anthrax (*Bacillus anthracis)*
Botulism (*Clostridium botulinum)*
Brucellosis (*Brucella* sp.)
Diphtheria (*Corynebacterium diphtheriae*)
Encephalitis
Haemophilus influenzae (invasive infection)
Hemolytic Uremic Syndrome
Hepatitis A (acute [IgM ⊕])
Measles (Rubeolavirus)
Meningitis (Bacterial)
Meningococcal Disease (*Neisseria meningitidis*, invasive)
Plague (*Yersinia pestis*)
Poliomyelitis
Rabies (humans only)
Rubella (congenital and non-congenital)
Tetanus (*Clostridium tetani*)
Tularemia (*Francisella tularensis*)
Viral Hemorrhagic Fevers

Important Note: Enteric illness in a foodhandler should be reported to the local board of health where the cases resides and the board of health where the case works.

INITIATE INVESTIGATION AND COMPLETE CASE REPORT FORM AS SOON AS POSSIBLE.

(This may include both suspect and confirmed cases.)

Amebiasis (*Entamoeba histolytica*)
Babesiosis (*Babesia microti*)
Campylobacter Enteritis (*Campylobacter* sp.)
Chickenpox (Varicella)
Cholera (*Vibrio cholerae* O1 or O139)
Cryptosporidiosis (*Cryptosporidium parvum*)
Cyclospora (*Cyclospora cayetanensis*)
Dengue
E. coli O157:H7
Ehrlichiosis (*Ehrlichia canis, E. chaffeensis, E. equi, E. phagocytophila, E.* sp.)
Foodborne Poisonings (includes poisoning by ciguatera, scombrotoxin, mushroom toxin, tetrodotoxin, paralytic shellfish and amnesic shellfish)
Giardiasis (*Giardia lamblia*)
Group A streptococcus (from blood, CSF or other sterile fluid)
Hansen's Disease (Leprosy)
Hantavirus
Hepatitis B
Hepatitis C
Kawasaki Disease
Legionellosis (*Legionella* sp.)
Leptospirosis (*Leptospira* sp.)
Listeriosis (*Listeria monocytogenes*)
Lyme Disease (*Borrelia burgdorferi*)
Malaria (*Plasmodium vivax, P. malariae, P. falciparum, P. ovale*)
Meningitis (viral)
Mumps
Pertussis (*Bordetella pertussis*)
Psittacosis (*Chlamydia psittaci*)
Rabies (animal)
Reye Syndrome
Rheumatic Fever
Rocky Mountain Spotted Fever *(Rickettsia rickettsii)*
Salmonellosis–including typhoid (*Salmonella* sp.)
Shigellosis (*Shigella* sp.)
Toxic Shock Syndrome
Toxoplasmosis (*Toxoplasma gondii*)
Trichinosis (*Trichinella spiralis*)
Yellow Fever
Yersiniosis (*Yersinia enterocolitica* or *Y. pseudotuberculosis*